

Remarks

Claim 3 has been amended to specify that the claimed method covers controlling general household pests selected from the group consisting of German cockroaches, house flies, imported red fire ants and bed bugs; as well as to specify that the components employed comprise bifenthrin, acetamiprid and an aqueous medium. Support for this amendment is found on page 2, lines 29 et seq. of the specification.

New claims 13-17 have been added; pending claims 1, 2, 4 and 9-12 have been cancelled; and the dependency of claim 8 has been amended. Support for new claim 13 is found in original claims 2 and 4; while support for new claims 14, 15, 16 and 17 is found on page 3 of the specification. Consequently, no new matter has been added as a consequence of this Amendment.

Pursuant to the outstanding Office Action claims 1-2 and 9-12 stand rejected under 35 USC 103(a) as being obvious over Asrar et al (US Patent 6,660,690). In addition, claims 1-4 and 7-12 stand rejected under 35 USC 103(a) as being unpatentable over Asrar et al in view of Knauf et al (WO 02/30200), Arther (WO 02/43494), Lahm et al (US Patent Application 2004/0198984) or Otsu et al (US Patent 5,661,164). These grounds of rejections are respectfully traversed and reconsideration requested in light of the arguments presented below.

The Presently Claimed Invention

The presently claimed invention is directed to a method of controlling household pests selected from the group consisting of German cockroaches, house flies, red imported fire ants and bed bugs employing a composition comprising bifenthrin, acetamiprid and an aqueous medium.

In this regard, it is noted that Applicants have demonstrated unexpected results with respect to the two important features of such control: (a) knockdown – quick, short term immobilization of such pests; and (b) mortality – death of such pests. Both of such features are important as home owners want to see a rapid debilitating effect on such insects as well as high mortality.

It is urged that such method is neither suggested nor disclosed by the prior art.

The Rejection in View of Asrar et al

It is noted that the rejection in view of Asrar et al alone is limited to the composition claims, and has not been applied to any method claims. Pursuant to the present amendment, composition claims 1, 2 and 9-12 have been cancelled; remaining claims 3, 7 and 8, as well as new claims 13-17 are all method claims. Consequently, it is submitted that this ground of rejection has been rendered moot by the present amendment.

The Rejection in View of Asrar et al and Knauf et al, Arther, Lahm et al
or Otsu et al

Asrar et al (US Application 2002/0115565) is directed to a method of preventing damage to seeds comprising treating such seeds with a composition comprising a pyrethroid and at least one other insecticide. Preliminarily, Applicants note that in Paragraph 53 Asrar et al specifically indicate that “The target pest for the present invention is an adult or larvae of any insect or other pest that feeds on the seed, roots and/or shoots and foliage of the plant that is to be protected by the subject method.” Accordingly, it is clear that Asrar et al is not directed to the control of general household pests such as German cockroaches, house flies, imported red fire ants and bed bugs which do not feed off the seeds, roots, shoots or foliage of plants.

Further, while Asrar et al alleges that a great number of combinations of pyrethroid/non-pyrethroid insecticide combinations are synergistic for a great number of insect genera over a large ratio of combinations, the sole relevant example provided by Asrar et al shows the unpredictability of the art as well as the complete lack of supporting data for such allegation.

Specifically, Asrar et al allege that each of the 825 combinations listed in Table 1 (including composition 76 which comprises bifenthrin + acetamiprid) will exhibit synergistic activity against the approximately 150 listed exemplary genera of insects listed in Paragraphs 54-80 at weight ratios of from 1000:1 to 1:1000 (see Paragraph 85). However, it is noted that the only data provided by Asrar et al (in Table 3) shows that many of the mixtures of the **sole** mixture exemplified (tefluthrin + acephate) – all of which mixtures should be synergistic

according the Asrar et al's shotgun disclosure – **do not exhibit synergy** when tested against the sole insect species tested (black cutworm).

For convenience sake, Table 3 of Asrar et al is reproduced below:

TABLE 3

Protection of corn plants against black cutworm damage by seed treatments with tefluthrin, acephate and combinations of the two.					
TREATMENT	Tefluthrin (gm/100 kg seed)	Acephate (gm/100 kg seed)	STAND REDUCTION (% at 10 days)	Percent of Control	Synergy
RAZE	100		75	75	
RAZE	200		100	100	
RAZE	300		83	83	
ORTHENE		100	6.3	6.3	
ORTHENE		200	18.4	18.4	
RAZE/ORTH	100	100	9.4	9.4	NO
RAZE/ORTH	100	200	9.4	9.4	YES
RAZE/ORTH	200	100	33	33	NO
RAZE/ORTH	200	200	9.4	9.4	YES
RAZE/ORTH	300	100	13.5	13.5	NO
RAZE/ORTH	300	200	7.1	7.1	YES
UN-TREATED CONTROL	0	0	100		

It is noted that, according to such Table, combinations of tefluthrin + acephate are not synergistic when applied at one 1:1 ratio (i.e., at 100 gm/kilogram each) but are synergistic when applied in the same ratio at higher amounts (i.e., at 200 gm/kilogram each). Similarly, it is noted that no synergy is present when such compounds are applied at 2:1 or 3:1 ratios; but synergy is alleged to occur when they are employed in a 3:2 ratio. Applicants urge that, in light of such data, Asrar et al – rather than suggesting the present invention as being obvious to try – show the unpredictability of the subject matter involved.

Knauf et al is directed to synergistic insecticidal compositions comprised of deltamethrin and acetamiprid. There is no suggestion that bifenthrin could be employed – indeed, the clear disclosure of paragraphs 2 and 3 on page 1 of the specification is that results of mixing any particular pyrethroid with any particular neoniconitoid is unpredictable. Such unpredictability is demonstrated by the data presented for the sole example provided by Knauf et al. Specifically, the table on page 6 of such publication shows that **no** unexpected activity was observed when

deltamethrin was employed at 1 ppm + acetamiprid at 3 ppm against the sole insect species tested (whitefly). This result is completely unpredictable from the other data presented, which:

- (a) show synergy (and equal efficacy) at 1/3 such rate of application (0.33 ppm deltamethrin + 1 ppm acetamiprid); and
- (b) increased efficacy for mixtures which contain less active ingredient (the control exhibited for 0.6 ppm deltamethrin + 3 ppm acetamiprid is 93.75%; the control for 1 ppm deltamethrin + 3 ppm acetamiprid is 82.5%).

Further, it is noted that Knauf et al only show mortality results 10 days after treatment – there is no suggestion or disclosure that a mixture of bifenthrin + acetamiprid would exhibit the unexpectedly desirable knockdown activity demonstrated by Applicants.

Despite alleging a broader invention, Arther is in essence directed to a synergistic composition for the control of parasitic acarids (particularly fleas and ticks) comprising a mixture of permethrin and imidacloprid. The data presented by Arther similarly demonstrate the unpredictability of the art – while synergy (in terms of effectiveness several days after application) is shown against ticks, the data presented for fleas (on page 19) indicates that the control provided by such combination is no better than that provided by imidacloprid alone (the data in the first line, for day -1, refers to results observed prior to the application of any insecticide, and thus does not indicate any unexpected results). Further, as Arther only demonstrates control observed after application of permethrin + imidacloprid after 1 day (at the earliest), there is no suggestion or disclosure in this application that the combination of bifenthrin + acetamiprid would exhibit unexpectedly desirable knockdown activity.

Lahm et al is directed to certain anthranilamides which exhibit arthropocidal activity. Although mixtures with other known insecticides are claimed (in claim 12 as noted by the Examiner) this publication contains no data showing any unexpected results of such combinations. Further, Applicants note that while claim 12 contains a broad laundry list of additional insecticides, this claim is directed at combinations of such insecticides + an anthranilamide. There is no suggestion or disclosure that any combination of such other insecticides – much less the combination of bifenthrin + acetamiprid in particular –would exhibit unexpected activity when employed against German cockroaches, house flies, red imported fire ants and bed bugs.

Otsu et al is directed to termiticide compositions comprised of a neoniconitoid + a pyrethroid. It is noted that there is no exemplification of the use of bifenthrin; and that the only insect evaluated by Otsu was the Formosan termite. Further, the only data presented is the insecticidal rate after 24 hours. There is no suggestion or disclosure that mixtures of bifenthrin + acetamiprid would exhibit unexpectedly desirable knockdown activity against general household pests.

Overall, therefore, it is noted that the cited publications (1) clearly point out the unpredictability of the art; and (2) nowhere suggest or disclose the unexpected control exhibited by the method of the present claimed invention.

Further, Applicants urge that the Examiner's reliance upon the Supreme Court's holding in KSR v. Teleflex is erroneous in the present set of circumstances. In this regard, the Examiner's attention is drawn to the recent "Examination Guidelines Update: Developments in the Obviousness Inquiry After KSR v. Teleflex" issued by the Patent and Trademark Office in the Federal Register (Vol. 75, No. 169) on September 1, 2010 at pages 53654-5. In discussing the decision of the CAFC in *Ortho-McNeil Pharmaceutical, Inc. v. Mylan Labs, Inc.*, 520 F.3d 1358 (Fed. Cir. 2008), such Guidelines state (at page 53655, first column, third full paragraph):

"Thus Ortho-McNeil helps to clarify the Supreme Court's requirement in KSR for 'a finite number' of predictable solutions when an obvious to try rationale is applied: Under the Federal Circuit's case law 'finite' means 'small or easily traversed' in the context of the art in question."

In the present case, as is emphasized above, the "solutions" proposed by the cited publications clearly show that the results obtained when combining any particular pyrethroid with any particular additional insecticidal active are not predictable. Thus the sole combination actually evaluated the primary Asrar et al publication (tefluthrin + acephate) exhibits inconsistent results when tested against a single insect species (black cutworm). A similar inconsistent result is presented by Knauf et al concerning the control of whiteflies by the combination of deltamethrin and acetamiprid. Arther demonstrates that the combination of permethrin + imidacloprid will show unexpected results against one arthropod (ticks) but not against another (fleas). Given such unpredictability, it is urged that KSR is not applicable in the present situation.

Overall, therefore, it is submitted that the present claimed invention is clearly patentable over the prior art. Reconsideration of the rejection of such claims is respectfully requested and allowance thereof courteously solicited.

Respectfully submitted,

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